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Growth Strategy for Maxxam DNA Analytics

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Abstract

Maxxam's DNA Analytics Paternity Testing business unit is facing decreasing revenue and increasing competition in the Canadian paternity testing industry. As the market is stagnant, strategies to gain market share from competitors need to be developed in order to achieve its goal of 5% growth goal. In the course of this project we analyzed the market and the customer decision making process through primary and secondary research. Based on our findings, we think that by improving its promotional activities through SEO (Search Engine Optimization) and paid ads, by targeting key customers, and by offering new and innovative pricing options, Maxxam can stand out and grow significantly.

DNA Analytics, Growth Strategy, SEO, Pricing.

Table of content

1.	Brief Context	4
1.1.	Corporate Client Structure and our client: the paternity testing business unit of Maxxam Analytics	4
1.2.	Market Overview	5
1.3.	Current Client Situation	7
1.4.	The Business Project Challenge	7
2.	Reflection on the work done	7
2.1.	Problem definition.....	7
2.1.1.	Based on the Maxxam's self assessment	7
2.1.2.	Verifying the problem.....	8
2.2.	Methodology, Research and Analysis	10
2.2.1.	An analysis of each business line	10
2.2.2.	Initial hypotheses to be tested – possibilities for growing the business	11
2.2.3.	Methodology	12
2.2.4.	Research and analysis to test each initial hypothesis	13
2.3.	Recommendations	16
2.3.1.	Recommendation 1: Measure and monitor online data.....	16
2.3.2.	Recommendation 2: Improve current SEO efforts to attract more customers	17
2.3.3.	Recommendation 3: Establish Google Ads for www.maxxam.ca	18
2.3.4.	Recommendation 4: Implement online-chat to engage customers and keep them on the website	18
2.3.5.	Recommendation 5: Train customer service agents to initiate sales calls and strengthen partnerships	19
2.3.6.	Recommendation 6: Offer unbundled pricing option for legal/immigration tests	20
2.3.7.	Recommendation 7: Offer upgrade option for curiosity test.....	21
2.4.	Individual Contribution	22
3.	Academic Discussion.....	23
3.1.	Possible links with your MSC field - Management.....	23
3.2.	Relevant Theories and Empirical Studies.....	23
3.3.	Implications for theory and future research.....	25
4.	Personal Reflection	26
4.1.	Personal Experience.....	26
4.1.1.	Key strengths and weaknesses observable during the project.....	26
4.1.2.	Plan to develop of your areas of improvement	27
4.2.	Benefit of hindsight: What added most value? What should have been done differently?	27

1. Brief context

1.1. Corporate client structure and our client: the paternity testing business unit of Maxxam Analytics

The client of our CEMS Business Project was the Paternity Testing business unit of Maxxam Analytics. Maxxam Analytics is part of Bureau Veritas, one of the world's leading companies in testing, inspection and certification services. Bureau Veritas is headquartered in Paris, France, and generated a revenue of €4.6 bn in 2015. The company has 66,500 employees and runs more than 1400 laboratories in 140 countries. It went public in October 2007 on the Paris Stock Exchange. In January 2014, Bureau Veritas completed the acquisition of Maxxam Analytics for C\$ 650 million (Bureau Veritas, 2015).

Maxxam Analytics is the Canadian market leader in analytical services. In 2015, Maxxam made C\$240 m of revenue and employed 2,500 people. The company offers analytical testing for a wide range of different industries, such as agriculture, energy, food manufacturing, oil & gas, mining and DNA. Their DNA division is the leading private DNA testing lab in Canada, providing Forensic testing, Animal DNA testing and Paternity testing. The last mentioned, Paternity testing business unit, was our client for the CEMS Business Project. The paternity testing business unit of Maxxam has 4.5 employees (number of employees not completely definable, as the paternity testing is done in the same laboratory and partly by the same scientists as the Forensics and Animal DNA units) and generated a revenue of C\$907,000 in 2015 (Maxxam, 2016a). In our meetings on February 26th and March 4th 2016, Wayne Murray, Director of Forensic and DNA Services at Maxxam Analytics, provided us with an overview about the business unit. It runs three different business lines: Curiosity, Immigration and Legal testing. While the scientific test for all business lines and the duration of 3-5 days per test is the same, the usability, requirements for the collection and pricing for the tests differ. The Legal business line accounts for 45% of the business unit's total revenue and provides a

paternity test that can be used in court to prove a family relationship. A trained third party witness is required for the DNA collection, and hence the DNA test can be done at any of the 450 local collection sites (e.g. hospitals or medical offices) that Maxxam cooperates with. The price for the customer is C\$375-550, depending on the number of persons tested.

The Immigration business line generates 50% of the business unit's total revenue and offers a test to prove a family relationship in order to sponsor a family member to Canada. Again, a trained third party witness is required for the DNA collection. The collection takes place at embassies overseas as well as in Canada, mainly at offices of immigration lawyers or consultants. The test costs C\$550-650, depending on several factors, such as the country of collection.

The curiosity test is a test for the "peace of mind" to confirm a family relationship. The test cannot be used for legal purposes, for example in court. Curiosity testing accounts for 5% of the business unit's total revenue. Send-home kits are provided by Maxxam, and no third party is required for the DNA collection. The price for the test is C\$249.

The higher price for the Legal and Immigration tests is due to extra costs of collection and administration costs, for example extra customer service and the provision of legal documents. The price for the Immigration test for example includes the fee for the collection site, which varies from C\$25-C\$75, depending on the collection site. However, these extra costs do not completely equal the higher price, and hence the profit margins for Maxxam for Legal and Immigration tests are higher than for curiosity tests.

1.2. Market overview

As the DNA paternity testing market in Canada is a very small market, no data about market size and total number of cases handled are available. The client itself had no data about the market and its dynamics. A closer look (through secondary research) to the US and the European market provides an understanding of market dynamics and trends.

In the US market the case volumes seem to stagnate, with big laboratories taking a bulk of the cases. After a steep increase of cases during the 1990s and early 2000s, the number of relationship test cases (legal, immigration, curiosity and forensic) per year reported by AABB¹ accredited labs has been between 350,000 and 410,000 since 2003. While two laboratories accounted for more than 100,000 cases each, the total number of AABB accredited laboratories is 19, which shows that there are clear market leaders and several smaller competitors. In the US, competitors engaged in a fierce price competition over the past few years, leading to tremendously decreased profit margins and test offerings at around US\$100 (AAB, 2013).

As data on the North American DNA testing industry is very limited, research on the European market can help to foresee developments in Canada. In Europe, revenue forecasts are optimistic. The total genetic testing and screening services market is assumed to grow with a CAGR of 11.3% between 2011 and 2018 to reach a volume of US\$1.9bn. The leading growth driver is the predictive resting segment with a CAGR of 14.1%, while the relationship testing segment is assumed to be growing with a CAGR of 9.6% and reach a market size of US\$376m (Frost & Sullivan, 2011). More than 1,000 laboratories and research centers are offering these tests, with hot spots for private commercial testing centers in Germany, the U.K, Spain, Benelux, France and Italy, with a few companies operating multinational. The average price per test has a high variance (US\$80-400) and more and more competitors are streaming into the market offering low-cost tests. According to a “Market Insight” by Frost & Sullivan, customer price sensitivity in the relationship testing segment is very high (9 out of 10) (Frost & Sullivan, 2012).

As already mentioned, there is no data available for the Canadian DNA testing market. However, it can be stated that competition in the Canadian market is high. Six companies (Orchid Pro

¹ AABB an international, not-for-profit association representing individuals and institutions involved in the field of transfusion medicine and cellular therapies (AABB, n.d.).

DNA, Accu-Metrics Viaguard, rpc Genetics, Genetrack Biolabs, Wnydham, and DDC) are recommended by the CIC (Citizenship and Immigration Canada), are offering similar services, and can hence be considered as Maxxam's main competitors. Furthermore several companies operating as "brokers" are operating in the Canadian DNA testing market, having the first point of contact with the customer and sending the work to the lowest bidding lab.

1.3.Current client situation

The revenue of Maxxam's DNA paternity testing unit has declined from C\$1,350,000 in 2010 to C\$900,000 in 2015. As accreditation is voluntary and barriers to enter the market are very low, the number of competitors has increased. An example for this increase can be found in immigration testing: The CIC sends out a referral letter with accredited labs to potential immigrants. The number of recommended labs has jumped from 4 to 7 between November 2015 and February 2016 (Maxxam, 2016b).

Maxxam's proclaimed goal is to grow the business unit's revenue by 5% for each of the next 5 years, following in line with the Bureau Veritas group's 2020 growth plan.

1.4.The Business Project Challenge

Our challenge was to identify a growth strategy for Maxxam's DNA paternity testing business unit. It was clearly stated by the client that he is not willing to enter new business fields (such as predictive testing), which would require new investments in technology, and that he is not willing to lower prices and enter a price war, fearing decrease in margins as happened in the US. Hence, our goal was to find growth opportunities for its three existing business lines, Immigration, Legal and Curiosity DNA paternity testing.

2. Reflection on the work done

2.1.Problem definition

2.1.1. Based on the Maxxam's self assessment

As already explained above, Maxxam's DNA paternity testing business unit is facing increased competition and declining revenues, while being expected to grow at a rate of 5% in each of the

following five years. The growth has to be realized within the the three business lines the company is currently operating in. We conducted an initial assessment of competitiveness based on a self-assessment and comments from Maxxam, following the 4P-Framework.

The same product is offered among all competitors, duration for a test of 3-5 days is the industry standard, accreditation is voluntary and the same certificate is used across the industry, and the a standard test is used by all companies in the market, ensuring 99.95% accuracy, hence there is no room to improve the product.

According to Maxxam, the prices across the industry are similar, while Maxxam might initially look expensive, due to their bundled pricing model, including all service and collection fees. As already mentioned, it is the company's explicit desire not to enter a price war.

Regarding the Place category, the company prefers online orders via the website for curiosity testing. Maxxam offers well-trained and experienced customer service to turn callers into customers, which is considered by them as their only advantage towards competitors. It cooperates with around 450 collection sites across Canada for legal, and immigrations tests, and shares most of them with competitors.

As Promotion, Maxxam undertook several social media attempts in the past, which were not successful, even though consultants were hired to work on Search Engine Optimization (SEO).

To increase legal/immigration casework, partnerships with lawyers and embassies were formed.

Based on this self assessment, customer service is believed to be the only advantage, while there is little room for improvement in terms of price and product. Following this, an external analysis was conducted to verify these initial findings.

2.1.2. Verifying the problem

As our market analysis has already pointed out, competition in the market was high, and all competitors offered similar services. Following this we conducted a price analysis, which showed

a fragmented pricing landscape in paternity testing with no clear pattern among the identified competitors. It showed a high variance of prices within the industry (Legal: C\$269-565; Immigration: C\$390-735; Curiosity: C\$119-395), likely due to the issue of price bundling. The majority of companies still have similar price ranges for their offerings, but there are outliers. Maxxam's pricing for Legal is slightly below industry average, while Immigration and Curiosity pricing is above (Appendix 1).

An analysis of customer service through primary research (calling Maxxam and competitors service hotlines as potential clients three times per company) was conducted. We tested the service quality of all companies in terms of "time to agent", "information accessibility" and "ease of conversation". Maxxam ranks well in all tested categories, leading in time to agent and information accessibility, while ranking second in ease of conversation (Appendix 2). Therefore, Maxxam's self-proclaimed high quality customer service was confirmed by the conducted evaluation.

Analyzing Maxxam's website data revealed technical problems. A drastic increase in loading time for the website has led to less customer engagement and makes it harder for Maxxam to compete in the online environment. The average page load time has increased by 30.88% in the first 3 months of 2016, from 12.32 to 16.12 seconds, leading to drastically increased bounce rates (meaning that more visitors enter the site and leave immediately rather than continuing to view other pages). The "pages per session" statistics underline this finding as less pages are being visited per visitor in 2016 than in the last months of 2015. Our analysis also highlights the importance of SEO, as 21.6% of Maxxam's homepage traffic was generated through organic search. Hence, the problem for our project was to find a growth strategy for Maxxam's DNA paternity testing unit, with the only present advantage being their above-average customer service.

2.2.Methodology, Research and Analysis

2.2.1. An analysis of each business line

2.2.1.1.Comparison of the three offerings – hurdles for growth

For the legal business line, exclusive long term contracts with provincial government could increase the number of cases, but Maxxam already has those contracts for the governments of British Columbia and Alberta, while the other states have binding contracts with Maxxam's competitors for the upcoming years. Maxxam also cannot actively increase the market size, as it depends on legal cases, and therefore the only option is to capture market share from competitors. However, collection sites are shared with competitors.

For the immigration business line, it would help Maxxam to have a preferable spot on the referral letters send out by the CIC to embassies and immigrants, however, it is impossible for Maxxam to actively influence the CIC. Again, the market size of the immigration market cannot be actively increased by Maxxam, and collection sites are shared with competitors. Another obstacle may be the above average price of Maxxam, given relative low income of some immigrants.

The curiosity line is facing the hurdle of Maxxam's high price point, which could be a problem, considering the price-sensitivity of customers. However, it is difficult to forecast if or to which extent a decrease in price can lead to a significant increase in volume (Barata et al., 2015).

As Maxxam cannot increase the market size for any of the three business lines, strategies to gain market share from competitors need to be developed.

2.2.1.2.Comparison of the three offerings – alternatives for growth

The alternatives for the legal and immigration business line are similar. Partnerships with lawyers and embassies through an analysis of the decision-marketing process in terms of DNA testing in law firms, and target marketing and sales effort based on this analysis could help Maxxam to increase its number of cases. Another way to do so would be the education of the final customer through an improved online presence and the offer of more guidance for immigrants/legal

customers, as more and more customers do research before visiting professionals (e.g. lawyers) (Bain & Company, 2012). Rethinking the collection model could facilitate growth as well, as an increased number of collection sites could help Maxxam to reach more customers.

For the curiosity line, improved marketing activities through an effective SEO strategy and off-brand and guerilla marketing could increase customer awareness. Pricing strategies without entering a price war, for example through different bundling/unbundling options or different pricing scenarios could help the company to reach price-sensitive customers.

For all three business lines, international expansion of the offerings could be another possibility. However, given more than 1,000 labs in Europe alone, low barriers to entry, a standardized product and extreme price competition worldwide, an international expansion does not seem to be the appropriate measure at this point, despite the possible connections through the Bureau Veritas Group (Frost & Sullivan, 2012). The opportunities in developing markets are taken on by government laboratories or local companies who can offer the same service at lower costs. Therefore the focus should be on the Canadian market, as international expansion does not seem feasible right now.

2.2.2. Initial hypotheses to be tested – possibilities for growing the business

The general idea behind our attempt was to tackle Maxxam's weak spots and turn them into competitive advantages. Following the 4P-Framework, Product was not considered as an alternative to work on. Given the current capabilities at Maxxam, predictive testing and DNA diagnostics cannot be considered as opportunities, and the standardized DNA test cannot be changed to give Maxxam a competitive advantage.

To improve Maxxam's Place positioning (distribution), optimizing the collection site system and offering additional sites can help Maxxam in reaching the final customer, as secondary research shows that location is a crucial part of the customer's access convenience and in inseparable

services (where the consumer needs to be present) the importance of accessibility is higher (berry et al., 2002). Hence, our first hypothesis was that more collection sites will lead to more customers and eventually to higher revenues.

To increase Maxxam's Promotion, the online visibility of the company is crucial in the competitive landscape (with an undifferentiated product) it operates in. In order to make their customer service a real advantage, customers need to be reached and drawn to Maxxam. Following this, our second hypothesis to be tested is that the internet is the main source of information, and given the undifferentiated product and the increased number of competitors, Maxxam faces an increased need for visibility on search engines and high importance of general online presence to acquire customers (Chitika, 2013).

Regarding Price, experimenting with different models could help Maxxam to grow revenues without cutting margins. Following this, our third hypothesis was that an undifferentiated product and high competition make the price an important decision factor for the customer in the DNA paternity industry. The complications we were facing were that limited information about the profit margins was available, as Maxxam did not have information about the exact margins themselves.

2.2.3. Methodology

In order to test our first hypothesis, we analyzed the collection site network of the competition to understand how much additional value additional collection sites could achieve.

In order to test our second hypothesis, we conducted primary research to understand the customers' decision-making processes. Therefore we conducted 17 interviews with immigration lawyers and consultants in order to understand how they choose which DNA testing companies to recommend to their clients (Appendix 3). We also set up an online survey for young adults between 18-30 years living in Canada to find out about consumer preferences within the DNA

testing industry. The sample included 74 responses (Appendix 4). The research helped us understand how the main customer groups think and act in choosing a DNA testing company and to identify what is important in terms of customer acquisition. An analysis of the research results provided us with insights to then find important leverage points within Maxxam.

2.2.4. Research and analysis to test each initial hypothesis

The results of the further research in terms of competitor analysis proved to be inconclusive. There is no clear data on the number of collection sites of the competitors. Only very few competitors have information on their collection sites available, and the few that do need to be treated carefully as it might be false information from what Maxxam pointed out. Therefore, while increasing the number of collection sites could help to reach more customers, it cannot be verified that Maxxam is lagging behind its competition in this area. Hence, due to the lack of reliable data, the hypothesis that more collection sites would lead to more customers and higher revenues could not be verified.

The 17 interviews conducted with immigration lawyers and consultants revealed that 47% of all interviewed firms have less than 5 cases per year. Only two firms (12%) have more than 5 cases per year, both of them large government organizations: Legal Aid and Ontario Works. Many firms chose not to disclose their number of cases (41%) or said they were unaware of any case in the previous year (Appendix 5). Considering these results, the payoff in liaising with individual law firms will be low due to the low number of cases per firm, but focusing attention and sales efforts on the few big players could boost sales volume. Hence, partnerships should be limited to key players.

The interviews also gave important insights on how labs are chosen by immigration consultants and lawyers. 29% stated that they pick the lab and refer it to the clients. However, 23% leave the choice of the lab completely up to their client, and 18% of the firms refer clients to a list of labs,

of which he then chooses the lab he visits. Following this, 41% of the firms indicate that clients have the final say in which lab they choose. While 29% of the firms indicate that they have the final decision to choose the lab (Appendix 6). Therefore, given the fact that the final customer, the person taking the test, oftentimes makes the decision for or against a lab, to connect with and educate the final customers becomes crucial. To understand their needs, the survey results of potential customers are analyzed in the following.

The survey among 74 young adults between 18 and 30 living in Canada revealed that 90% of respondents would look for information about DNA testing online, and the majority of them listed Google as their go-to alternative. This leads to two focus areas for the analysis: How is Maxxam doing with regards to key search terms mentioned in the survey, and how is Maxxam's website perceived compared to its competitors.

Our research showed that Maxxam is performing poorly with regards to the key search terms identified in our survey. The respondents of our survey stated that they would google terms such as "DNA testing", "DNA testing Canada" or "Paternity testing". For these search terms, Maxxam ranks 9th on the first page, 6th on the second page and 9th on the first page respectively. Hence, for those key search terms, as well as for other such as "family relationship DNA testing" and "maternity test Canada" Maxxam doesn't rank among the top positions. According to Chitika (2013), 92% of traffic goes to sites listed on the first pages of search results. Furthermore 33% of traffic goes to the first ranked site, 12% to the third ranked site, while only 3% goes to the fifth ranked site. This underlines the need for an improved SEO for Maxxam. By improving its ranks for key search terms, Maxxam could drive significantly more traffic to its website.

Regarding their website, our analysis of the Google Analytics data for Maxxam's website highlights the importance of the first impression, as 57.5% of all sessions initiated do not last longer than 10 seconds. Based on these findings, we let the participants of our survey rank

Maxxam and its competitors solely based on the front page impression of their websites. The participants ranked Maxxam fourth with an average ranking of 3.1, compared to Genetrack Biolabs as the leader with an average ranking of 2.5 and Accu-Metrics, ranked sixth with an average ranking of 5.0 (Appendix 7). Therefore, Maxxam needs to identify shortfalls of its current online presence and find measures to increase its front page appeal.

In the next section of our survey we let the participants rank four attributes related to DNA testing (Accuracy of the test, price of the test, speed of test results and customer service). While the accuracy of the test was valued the highest of all four listed attributes (avg. rank 1.29), the results show that the price of the test is on average the second most important attribute (avg rank 2.4), and hence a key selling point. Customer service, which Maxxam emphasizes, ranked as least important (avg. rank 3.0) (Appendix 8). Although a simple ranking might skew the results as the actual decision making process will be more complicated and influenced by emotions, Maxxam should not ignore the issue of price when it comes to winning customers. As hypothesized from the beginning, the survey results confirmed the importance of the price of the test for customers.

An analysis of the pricing in the DNA industry shows that Maxxam has been “stuck in the middle” in legal as well as curiosity testing. While curiosity testing has a wide range of prices in the market, the legal testing field has formed a cluster in terms of price density. In both cases, Maxxam does not stand out, but is rather average (Appendix 9).

Further research of the Canadian and the German DNA testing market helped us to explore two pricing options which could help Maxxam to be perceived as cheaper than the competition. First, competitors of Maxxam, such as Accu-Metrics, offer unbudled legal and immigration test with a low base price – the customer will pay for the collection costs. As research shows, a price that is initially lower is very important in winning customers (Reibstein, 2002). An analysis of the German market pointed as a further possibility to compete on price without a simple “price war”.

German laboratories such as “Galantos Genetics” and offer an upgrade option for their curiosity test to become a legal test. An option like this could help in attracting customers for the legal as well as the curiosity business line.

Starting with the initial 4P-Framework to alternatives for Maxxam, the research results indicate that promotional improvements can have the most impact on Maxxam’s growth. However, alternative pricing concepts can also stimulate revenue in the future. Three main areas within Promotion and Price are identified that can be tackled, while not enough reliable data was available to work on Place, and Product was not considered an alternative to work on from the beginning. Research and analysis revealed two main areas to improve Promotion: Reaching the final customers and Reaching out to important big customers, which will be the first priority of our recommendations. To improve Price, we will focus on solutions to stand out with better pricing options.

2.3.Recommendations

2.3.1. Recommendation 1: Measure and monitor online data

To improve the promotional activities and to have a successful online marketing strategy, monitoring and measurement are of utmost importance. During the time of this project, it became obvious that the analysis of online data is neglected at Maxxam. Although data is easily available via Google Analytics, it is not communicated to decision-makers in the company.

Google Analytics offers an easy-to-use platform to monitor online performance. There must be a specific person in charge of the monitoring, who keeps track of possible changes so reasons for them can be found. Examples for important data to be measured and monitored are: Weekly and monthly website traffic, online chat encounters, number of online purchases and where customers find Maxxam.

The implementation of effective measurement and monitoring of online data would not carry any additional costs for Maxxam, as Google Analytics data is available and a customer service agent

can be assigned the task of monitoring. While the benefits are not quantifiable, measuring and monitoring would facilitate all (online) marketing activities.

2.3.2. Recommendation 2: Improve current SEO efforts to attract more customers

As our research shows, website ranking in Google search results is of utmost importance and Maxxam ranks poorly in these categories. The ranking of organic search results, i.e. the ones that are not indicated as paid Google Ads, prove to be important and can be improved by SEO. As 71% of the links the users click on are organic links on the first page, not paid ad links, the focus for Maxxam will be on SEO instead of paid ads (Advanced Web Ranking, 2014).

To improve the search ranking, we suggest to hire an expert company to do the SEO – e.g. ‘Graphically Speaking’, a Vancouver based company specialized in online marketing and SEO. We recommend to use the professional for at least six months to see the impact on traffic and revenues and to receive guidance. A key in online marketing is measurement: in line with ‘Recommendation 1’, there needs to be a person responsible for monitoring the website traffic and communicating with the agency. After six months it can be re-assessed whether the outside agency is no longer needed and if the in-house staff can maintain the improved ranking.

The costs for an initial SEO audit are C\$960 plus monthly SEO, which would cost C\$1,200/month. For a period of 6 months, the total costs would be C\$8,160.

There is a lot of potential in SEO as the traffic can increase significantly. An exemplified calculation for the benefits: If ranking can be lifted from current 9th place to 3rd place for most searched keywords, that means on average four times more traffic (from 3% to 12%). Assuming the conversion rate stays the same, the number of online purchases should multiply by 4. The Curiosity line would increase its sales to 72 online purchases per month, as the current average is 18 cases per month. 54 more cases per month can be translated to a revenue of C\$13,446 per month (calculating with curiosity test price C\$249), or C\$161,352 per year. For the Legal and

Immigration business line would also likely to attract more customers, as primary research has shown that 41% of final decisions regarding labs are made by customer. However, it is hard to quantify the increase in sales for both business lines.

2.3.3. Recommendation 3: Establish Google Ads for www.maxxam.ca

Organic search results are preferred by customers, however an additional presence under the Google Ad section will help Maxxam maximize its reach. As mentioned, 71 % of links clicked are organic links on the first page. Given the fact that almost all traffic goes to the first page (92%), it can be estimated that around 25 % of clicks go to paid ads on the first page.

The costs can be easily controlled by Maxxam as the pricing works as follows: Maxxam decides on a price per click (PPC) that it will pay for each customer that clicks on its ad, and a maximum daily budget. Each time a consumer searches “DNA testing Canada” Google calculates which ads to show based on Ad Rank (bid amount, expected click-through rate, ad relevance, landing page experience etc). If Maxxam’s Ad Rank is good enough, it will be shown to the consumer. Given this somewhat complicated system, an initial trial period of 3 months that can be extended seems appropriate in order to test out and adjust prices and evaluate effectiveness.

We suggest a daily budget of C\$20 (with a price-per-click of C\$1) for 3 months. Therefore the costs for a 90 day trial period would be C\$1,800 (or C\$600/month) (Google, 2015).

The benefits are not quantifiable at the moment – but given the fact that 25% of all clicks are going through Google Ads and the limited financial risks in the outlined model, it is worth a try. If 600 customers click through to the webpage, C\$600 are charged by Google, only 3 curiosity tests would need to be sold to break even (which would be a conversion ratio of 0.5%).

2.3.4. Recommendation 4: Implement online-chat to engage customers

A majority of the website visitors spend less than 10 seconds on the webpage. An online chat function can help to get the customers’ attention during this short time period and encourage

him/her to stay on the webpage and understand the product portfolio. This way the customer can get the same customer service without having to make a potentially uncomfortable phone call. Internal company information revealed that the customer service agents are not fully stretched with their current customer service tasks and therefore can take on this additional task (only around 100 calls are received per month, and Maxxam employs three customer service agents). Live chat software can be acquired via a specialized company such as 'LivePerson'. The current customer service agents can work in customer service both online and on the phone, due to the rather low number of calls per agent per day. The agents should also keep track of the number of chat engagements per day as well as the kind of questions that are asked by clients – linking back to the 'measuring and monitoring' recommendation. An initial period of 6 months seems appropriate to judge effectiveness.

The implementation costs would be C\$179 per month for three customer service agents, and therefore C\$1,074 for six months (LivePerson, 2016). The benefits are not quantifiable, but even if a small number of the 629 visitors per month that leave the website within the first 10 seconds can be engaged into a conversation, it is likely that the small investment will pay off.

2.3.5. Recommendation 5: Train customer service agents

The primary research has shown that there are some potentially bigger clients (Legal Aid, Ontario Works, big law firms) as well as important partners: Hospitals and doctors could be made aware of Maxxam. Also 13% of survey respondents claimed to inform themselves about DNA tests via hospitals/doctors. In Ontario, Legal Aid has signed a contract with Maxxam's competitor Orchid for all cases. No outbound sales calls are currently conducted by Maxxam's customer service agents and the number of incoming calls is very low (103 calls for three agents in February 2016). By having a more proactive sales approach, Maxxam can not only actively advertise its name, but can also get a better understanding of potential new big customers and trends. The

main motivation is to make use of the customer service agents' full potential and take advantage of the expertise they have gained over the years.

As the outbound sales/advertising call is different from receiving customer calls, a training course could be useful to prepare the customer service agents for the new task (e.g. at CPSA in Toronto). Initially, this could be limited to one of the agents as a pilot project. The focus of the calls should then be directed at the big organizations like Legal Aid and Ontario Works, bigger law firms as well as potentially hospitals or social institutions for youth and young families.

The costs for a 3-day sales training in Toronto with CPSA for one agent are C\$1,795 (CPSA, 2016). The benefits are not quantifiable, but given the fact that competitors reached agreements with big organizations, this offers great potential.

2.3.6. Recommendation 6: Offer unbundled pricing option for legal/immigration tests

Research shows that a price that is initially lower is very important for winning customers. Unbundling the price would be a viable alternative and evidently a cheaper option to the customer, while retaining high margins for Maxxam. Hence it would help Maxxam to appear as a cheaper alternative and 'reel in' customers without engaging in a price war to 0. Offering both pricing options, bundled and unbundled, would empower the customer to search and choose collection sites based on his own preferences, such as price and proximity.

Maxxam needs to come up with a base price for its legal and immigration tests that excludes the collection fees. By adding an unbundled pricing option for legal and immigration tests, Maxxam would have the following two offerings: A bundled option (as currently offered by Maxxam), where the customer pays Maxxam for the complete package, and an unbundled option, where the Customer pays Maxxam only for the DNA test plus the service of providing legally viable documents, and pays the price for the collection directly to the collection site he chooses to visit.

Maxxam should clearly label that additional costs will arise to not enter into the same sketchy business practices as some of the competitors and stay fair to its customers.

The implementation would not carry any additional costs, except for potential costs for updating the home page and other marketing materials. The benefits are not quantifiable at the moment, but a gain of market share and customer growth can be expected, especially of price sensitive customers, due to the evidently cheaper price.

2.3.7. Recommendation 7: Offer upgrade option for curiosity test

To gain market share in the curiosity field, it seems like simply lowering prices is the only differentiating option, however this is not desired by Maxxam. Offering an upgrade option – from curiosity to legal – for customers who are unsure if they will go to court (depending on the result of the test) gives Maxxam the opportunity to offer something new in the Canadian market and potentially increase the curiosity as well as legal business line.

The process would be the following: After a customer orders a curiosity test and pays \$249, Maxxam sends out the test kit with a list of accepted collection sites (depending on customer's postal code). The customer then chooses whether to conduct the test by himself (no upgrade option) or to go to one of the collection sites to be able to upgrade in the future. He pays the fee for the collection site himself. After receiving the results of the curiosity test from Maxxam, the customer can require an upgrade of the test to a legal test if needed, paying only the price difference between a curiosity and a legal test.

The additional charge includes legally defensible paperwork as well as more customer service. The logic behind the higher price does also not differ from the current business model in which a higher price is charged for legal tests despite the fact that the actual test is the same.

An upgrade option would carry benefits for customers and Maxxam. The customer would face an easier decision to first do a curiosity test and then upgrade if needed at later stage (otherwise they

pay for the same test ‘twice’). He would also have monetary savings in unclear situations of whether the test is needed in court or not. For Maxxam, the upgrade option would be an opportunity to steal from competitors in legal field without changing prices there - ‘reel in’ customers that are not sure whether they want to go to court. It would also leverage Maxxam’s high-quality testing (as same test results can be used for court as well as for curiosity).

The total costs for the implementations require an investment of C\$16,419, while the expected revenue growth in the first year after implementation could reach C\$161,352 (rough estimate) and hence be significantly above 5%. Even though future growth through the implementation of our recommendation is not quantifiable, it is likely that the total benefits outweigh the total costs significantly.

2.4.Individual Contribution

Throughout the Business Project, I identified key problems, conducted analysis’ on key issues, defined hypothesis to be tested, our research to verify them, and developed recommendations for the client. As the Business Project is a group project, most decisions made were discussed with the other group members. However, in this project, I and one of my group members developed the main approach and structure the whole project was following, identifying the key problem and defining the hypothesis to be tested.

Later on, I developed the different innovative and alternative pricing options for Maxxam, as described in recommendations 7 and 8. By analyzing Maxxam’s pricing positioning within the industry, and identifying best practices of the Canadian DNA testing and the German DNA testing industry, I came up with pricing solutions that we think can help Maxxam to attract more customers, without simply lowering their prices and engaging in a price war.

3. Academic Discussion

3.1.Possible links with your MSC field - Management

With the e commerce sales growing worldwide, it is crucial for managers across all industries to drive their company's online positioning (Internet Retailer, 2015). As search engines are the main website traffic driver, managers need to develop and implement successful SEO strategies to succeed in today's business environment. Thus, a deep understanding of search engine marketing and effective SEO strategies is of highest importance.

3.2.Relevant theories and empirical Studies

As the paternity testing industry and the DNA testing industry in general is rather small, no industry-specific studies about SEO marketing can be found. However, a general overview about the academic discussion on SEO can help to gain important insights and a better understanding of effective SEO strategies in general.

Our recommendation that the ranking of organic search results is of highest importance for Maxxam to grow and reach new customers, is backed by the findings of Jerath et al. in 2014, which state that the majority of website traffic through search engines is generated through clicks on organic links, rather than through paid clicks on Google ads (Jerath et al., 2014). This is also the reason why more advertisers nowadays focus on organic clicks, rather than on paid clicks (Berman and Katona, 2013). Despite the importance of organic clicks through search engines, little empirical research on SEO in that regard exists.

A study by Baye et al. in 2016, using a dataset of more than 2 million users of the top 759 retailers to identify what drives their organic clicks, provides valuable findings for SEO. It shows that a company's rank in search results is a major indicator for the organic clicks it will generate. The study found that for retailers, a 1% improvement in rank (on the first five pages) leads to a 1% more organic clicks.. Several other studies confirm that most searchers click on links they

find on the first page of searching results, and that as a result, a high ranking in search engine rankings is of highest importance to increase traffic (Enge et al., 2012; Hopkins, 2012; Chuklin et al., 2013).

However, the study by Baye et al. also suggests that an exclusive focus on organic search would be a mistake, as rankings can be considered as a zero-sum game, and other companies have incentives to improve their ranking in search engines as well.

According to Baye et al., investments in brand equity can carry high benefits for SEO strategies. Increased customer awareness through advertising, a user-friendly website, high quality content and services have direct and indirect effects on organic clicks. As a direct effect, it is more likely that customers click on links of companies they know and trust, and as an indirect effect, it leads to better ranks, as the brand equity of a company's site is correlated with the relevance of links (hence, the company get ranked higher because search engines want to provide users with relevant links). It is also likely, that investment in brand equity has spillover benefits in other channels. While it is difficult for Maxxam as a player in a small industry, such as the DNA paternity testing industry, to create high brand awareness, the findings support our recommendations of improving the websites user friendliness through a customer-service chat function.

Another key finding of Baye et al. is that there is a relationship between sponsored links and organic clicks. If they associate an organic link with a sponsored link, customers are more likely to click on it; hence there are possible spillovers from paid links.

Other studies confirm this finding. Yang and Ghose (2010) showed that paid ads lead to a higher click-through rate on organic links, and vice versa. According to the study, this happens because it encourages customers if a company is listed in both, the organic and paid listings. Furthermore, the relationship is asymmetric, such that the impact of organic clicks on paid clicks is 3.5 times

stronger than the other way around. This confirms our recommendation for Maxxam, that while improving their organic link ranking should be the company's main priority, it should also establish Google ads to leverage the positive correlation and to maximize traffic.

Notable is also an industry studies, which states that more specific key word phrased are likely to produce higher quality traffic and higher conversion rates (Iprospect, 2006). This is something companies like Maxxam should take into account.

Even though a lot of the studies and literature found support our recommendations, the findings and conclusions drawn may be limited for Maxxam, as the DNA paternity testing industry differs from the retailing industry, so it is likely that customer behavior differs as well. Still, a high ranking in organic listings on search engines, combined with investments in paid links and brand equity could prove to be highly effective for Maxxam.

As especially brand equity is difficult to build, as a small company in a small market, especially for curiosity testing, pricing may be a decisive factor. Light (1997) found that the less different a brand is perceived, the less consumers are willing to pay more for a product of a specific brand. However, it is unclear whether this is critical in the DNA paternity testing industry, and to which extent reducing prices can attract new customers. Hence, it is impossible to predict, how much a reduction in price would increase sales volume for Maxxam. Therefore rather exploratory and innovative pricing techniques, as recommended by us, such as offering a bundling and unbundling, as well as an upgrade version, could help Maxxam to increase their volume.

3.3.Implications for theory and future research

Besides the missing industry specific research on the DNA testing industry, which is unlikely to be provided in the future, due to the size of the industry, future research should explore the effectiveness of SEO with regards to costs. While several studies about the sole benefits and

effectiveness of SEO strategies can be found, none of those take costs into account. As companies pay for both, paid ads and the optimization of their search engine ranking, and given the fact that costs are an important factor of optimization, they need to be taken into account for management decisions regarding SEO and paid links. Future research could explore this and therefore provide valuable insights for (online) marketing decision makers.

4. Personal reflection

4.1. Personal experience

4.1.1. Key strengths and weaknesses observable during the project

In the course of this project, I was effective in identifying the key problems and finding the right way to address it through thorough analysis. I think that due to my analytical thinking skills I was, together with my team, able to develop feasible recommendations which can help Maxxam to grow within in the near future.

Throughout the project I have also proven again to be an effective communicator, within the team, as well as with the client and the professor mentoring the project.

However, even though I communicated effectively, I had difficulties to address the high differences of quality of the deliverables of the individual team members. While some team members delivered work of very high quality, the work of others was not presentable. As me and another team member constantly merged the work and designed the final outcome, it was us who became aware of this discrepancy. It was also obvious, that some team members delivered poor work due to a lack of engagement, while others delivered poor work due to a lack of experience. I have to admit, that I did not undertake a lot of effort to help the less experienced group members to improve their work, neither did we discuss this topic explicitly within our group. Instead of having a discussion with running the risk of hurting the team chemistry, I and the team mate responsible for the final presentation fixed the mistakes and shortcomings by ourselves. While we

tried to delegate the tasks according to the strengths of the different team members, we still could have addressed this issue more clearly and more effectively.

4.1.2. Plan to develop of your areas of improvement

To improve this shortcoming, especially in the environment of university group work, is more than challenging. Not considering that this was the last group work of my university career, I need to find ways to ensure the same engagement and quality of outcome of all group members. As already said, this is rather challenging in the university environment, as no student has authority for any sanctions, except maybe peer evaluation. However, effective communication techniques could help me to overcome this issue.

4.2. Benefit of hindsight: What added most value? What should have been done differently?

The most added value for me was to gain insight to an industry that I know nothing about, and to face the phenomenon (or stereotype) of scientists, who do not pay attention to the business side, in reality. I also enjoyed working with Frederik Motzet as one of the most intelligent group members I have worked with throughout my university career.

As already explained above, what should have been done differently is to ensure the equal contribution of all group members. Besides that, I was a bit disappointed about the CEMS Business Project in general. Even though we received very positive feedback and got graded highest among all groups, our project had, in my opinion, not the scope of a CEMS Business project (as most other projects offered at Ivey).

Bibliography

AABB (2013) Annual Report Summary for Testing in 2013. Retrieved from <http://www.aabb.org/sa/facilities/Documents/2013-relationship-testing-summary-report.pdf>

AABB (n.d.). Retrieved from <http://www.aabb.org/about/who/Pages/default.aspx>

Advanced Web Ranking. (2014). Google Organic CTR Study. Retrieved on 5 April 2016 from: <https://www.advancedwebranking.com/ebooks/Google-Organic-CTR-Study-2014.pdf>

Baye, M. R., De Los Santos, B., Wildenbeest, M. R. (2015), "Search Engine Optimization: What Drives Organic Traffic To Retail Sites?", *Journal of Economics & Management Strategy*, Volum 25, Number 1, Spring 2016, pp. 6-31.

Barata, L. P., Starks, H., Kelley, M., Kuszler, P., & Burke, W. (2015). What DNA can and cannot say: Perspectives of immigrant families about the use of genetic testing in immigration. *Stanford Law & Policy Review*, 26(2), 597.

Bain & Company. (2012). Was Bankkunden wirklich wollen. Retrieved from http://www.bain.de/Images/Studie_Banking_ES.pdf

Berman, R., and Z. Katona, (2013), "The Role of Search Engine Optimization in Search Marketing," *Marketing Science*, 32, 644–651.

Berry, L.L., Seiders, K. and Grewal, D. (2002) Understanding Service Convenience. *Journal of Marketing*, Vol. 66, 1-17.

Bureau Veritas (n.d.) Key figures. Retrieved from <http://finance.bureauveritas.com/phoenix.zhtml?c=216209&p=irol-fundamentals>

Chitika. (2013). The Value of Google Results Positioning. Retrieved from <https://cdn2.hubspot.net/hub/239330/file-61331237-pdf/ChitikaInsights-ValueofGoogleResultsPositioning.pdf>

Chuklin, A., Serdyukov, P. and De Rijke, M. (2013), "Modeling clicks beyond the first result page", *Proceedings of International Conference on Information and Knowledge Management*, pp. 1217-1220.

CPSA (2016). Retrieved from <https://www.cpsa.com/learning-development/sales-training/professional-selling>

Enge, E., Spencer, S., Stricchiola, J. and Fishkin, R. (2012), *The Art of SEO: Mastering Search Engine Optimization*, 2nd ed., O'Reilly Media, Sebastopol, CA.

Frost & Sullivan (2012, April) European Genetic Testing and Screening Services Market - Predictive Medicine and Pharmacogenomic Testing to Support the Market Growth.

Frost & Sullivan Market Insight (2011, December) Genetic Testing for a Better Health - The Next Big Thing in Molecular Diagnos.

Google. (n.d.) How cost are calculated in AdWords. Retrieved on 5 April 2016 from: <https://support.google.com/adwords/answer/1704424?hl=en>

Hopkins, L. (2012), "Online reputation management: why the first page of Google matters so much", retrieved from: www.leehopkins.net/2012/08/30/online-reputation-management-whythe-first-page-of-google-matters-so-much/

Internet Retailer (2015); "Global e-commerce sales set to grow 25% in 2015", Retrieved from: <https://www.internetretailer.com/2015/07/29/global-e-commerce-set-grow-25-2015>

iProspect (2006); iProspect Search Engine User Behavior Study, Watertown, MA: iProspect.

Jerath, K., L. Ma, and Y.-H. Park, 2014, "Consumer Click Behavior at a Search Engine: The Role of Keyword Popularity," *Journal of Marketing Research*, 51, 480–486.111

Light, L. (1997), "Brand loyalty management: The basis for enduring profitable growth", *Direct Marketing*, Vol. 59 No 11, pp. 36-43.

LivePerson (2016). Personal quote. Retrieved from www.liveperson.com

Maxxam (2016a) Confidential financial documents.

Maxxam (2016b) Google Analytics report for thednalab.com

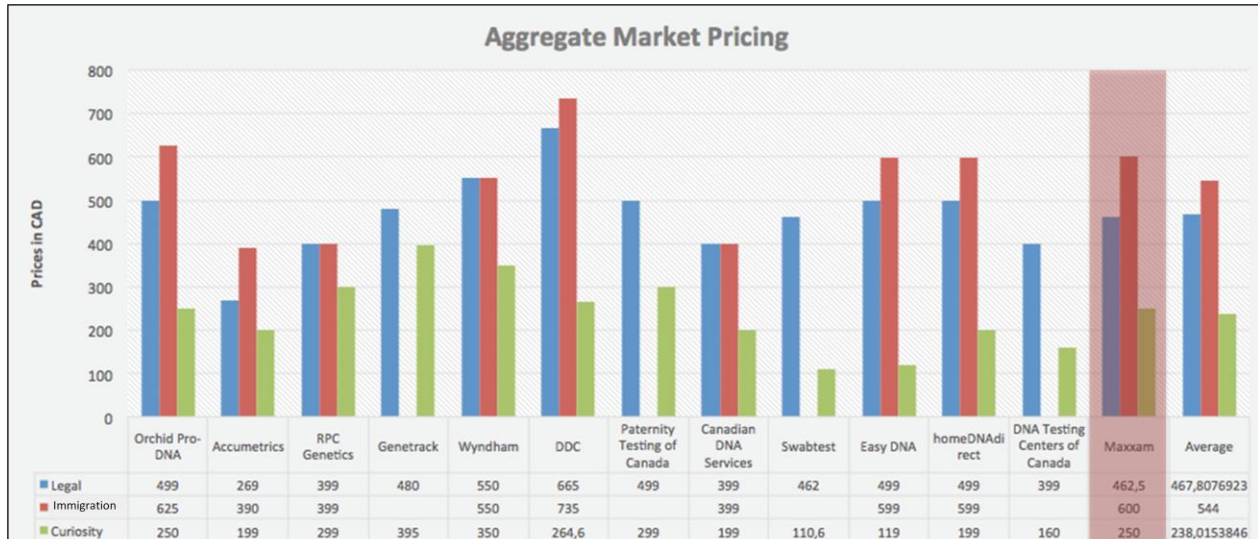
PWC. (2012) Understanding how US online shoppers are reshaping the retail experience. Retrieved from <https://www.pwc.com/us/en/retail-consumer/publications/assets/pwc-us-multichannel-shopping-survey.pdf>

Reibstein, D. J. (2002). What attracts customers to online stores, and what keeps them coming back? *Journal of the Academy of Marketing Science*, 30(4), 465-473.

Yang, S., and A. Ghose (2010), "Analyzing the Relationship Between Organic and Sponsored Search Advertising: Positive, Negative, or Zero Interdependence?" *Marketing Science*, 29, 602–623.

Appendix:

Appendix 1: Pricing across the Canadian DNA Paternity testing industry



Source: Aggregated market pricing data received via primary research (1): Calling competitors to find out about pricing and compare the level of customer service. The research has been completed, and the sample size is 12 competitors. The competitors were identified by Maxxam and by the student team based on Maxxam's confidential information and Google search results. The competitors include: Accu-Metrics, Canadian DNA Services, DNA Diagnostics Center., DNA Testing Centers of Canada, EasyDNA., Genetrack Biolabs., HomeDNAdirect, Orchid PRO-DNA, Paternity Testing Centers of Canada, RPC Genetics, Swabtest, Wyndham Forensic Group Inc.

Appendix 2: Customer Service across the Canadian DNA Paternity Testing Industry

Company	Time to Agent	Information Accessibility	Ease of Conversation	Price Match
Orchid Pro-DNA	9.3 s	2.3	2.7	Yes
Accumetrics	8.3 s	3.7	3.3	Yes
RPC Genetics	20.3 s	3.0	3.3	No
Genetrack	40.7 s	3.0	3.7	No
Wyndham	25.3 s	2.0	3.0	No
DDC	200.0 s	3.3	3.0	Yes
Paternity Testing of Canada	7.0 s	1.0	1.7	No
Canadian DNA Services	25.7 s	3.0	2.7	No
Swabtest	-	-	-	-
Easy DNA	31.0 s	3.0	2.7	No
homeDNAdirect	7.7 s	4.0	3.7	No
DNA Testing Centers of Canada	28.0 s	2.0	2.0	No
Maxxam	5.7 s	4.0	3.3	Yes
Average	35.7 s	2.79	2.88	No

*Scores from 1(low) to 4(high):
For the scores we evaluated the information accessibility in terms of the information the customer service was able to provide, as well as the ease of conversation, including smoothness of conversation and waiting times

Source: Aggregated market pricing data received via primary research (1):

Appendix 3: Interview questions for immigration consultants/lawyer interviews

Interview Questions

1. How many cases with DNA testing do you deal with per year?
2. How do you go about choosing the DNA labs that you use/recommend to your clients? If you are able/willing to tell us, which lab do you currently use?
3. Are there any incentives in choosing a particular lab? What characteristics are you looking for?
4. Who in your company makes the decision on which DNA laboratory to use?
5. If you ever switched labs, what made you do that?
6. Are you working under a rebate contract? Would you be interested in doing that?
7. Do you value having a long-term relationship with the lab? Would you prefer having a sales person point of contact inside the company?

Appendix 4: Survey of potential customers

Background information:

1. Which Province do you live in?

Alberta

British Columbia

Manitoba

New Brunswick

Newfoundland and Labrador

Northwest Territories

Nova Scotia

Ontario

Prince Edward Island

Quebec

Saskatchewan

Yukon

2. Age:

Under 18

18-30

Over 30

3. Gender:

Female

Male

Prefer not to disclose that

Questions:

- 1.If you wanted to do a DNA test to prove a family relationship (paternity, maternity, siblingship or other), where would you first look for information about how to do that?

2. Please list up to 5 words/phrases that you would use when searching for information about DNA family relationship testing (paternity, maternity, siblingship or other) on Google/other search engines?

3. Assuming you are in the situation to choose a company for a DNA paternity/relationship test. Based on the appearance of the following websites, which company would you choose?

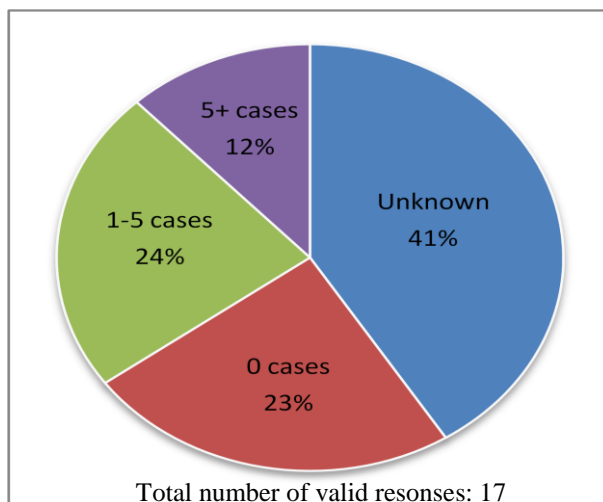
4. How would you rank these attributes from most important to least important when deciding which DNA analytics company to choose for your DNA test (1=lowest, 4=highest):

accuracy of the test
price of the test
customer service
speed of the results

Interview Questions

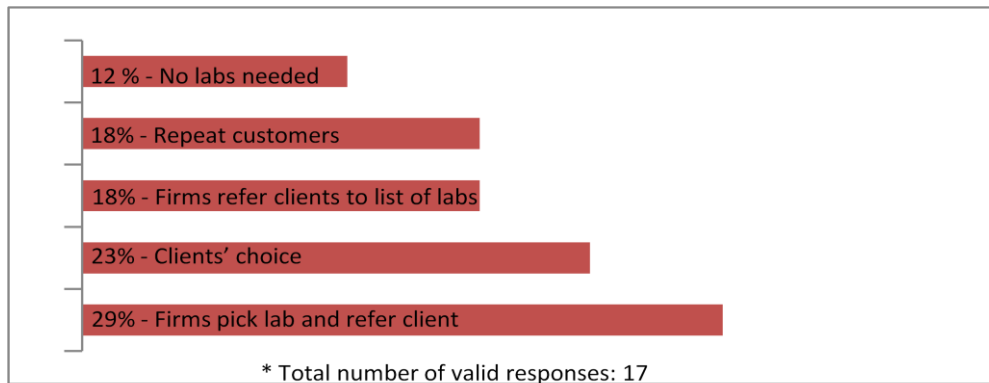
1. How many cases with DNA testing do you deal with per year?
2. How do you go about choosing the DNA labs that you use/recommend to your clients? If you are able/willing to tell us, which lab do you currently use?
3. Are there any incentives in choosing a particular lab? What characteristics are you looking for?
4. Who in your company makes the decision on which DNA laboratory to use?
5. If you ever switched labs, what made you do that?
6. Are you working under a rebate contract? Would you be interested in doing that?
7. Do you value having a long-term relationship with the lab? Would you prefer having a sales person point of contact inside the company?

Appendix 5: Total number of cases per year per immigration consultant/lawyer









Interview results received via primary research (3) with immigration consultants and lawyers: Telephone interviews with immigration consultants and lawyers. The target group includes 17 of Maxxam's current customers and non-customers.

Appendix 6: How are labs chosen by immigration consultants/lawyers



Interview results received via primary research (3) with immigration consultants and lawyers

Appendix 7: Website ranking based on front page impression

	Competitor	Average ranking*
1.	 GENETRACK BIOLABS Medical DNA Testing Services • Legal Biomedical Services	2.5
2.	 rpc GENETICS	2.7
3.	 DDC DNA Diagnostics Center	2.9
4.	 Maxxam	3.1
5.	 Orchid PRO DNA	4.5
6.	 ACCU-METRICS VIAGUARD	5.0

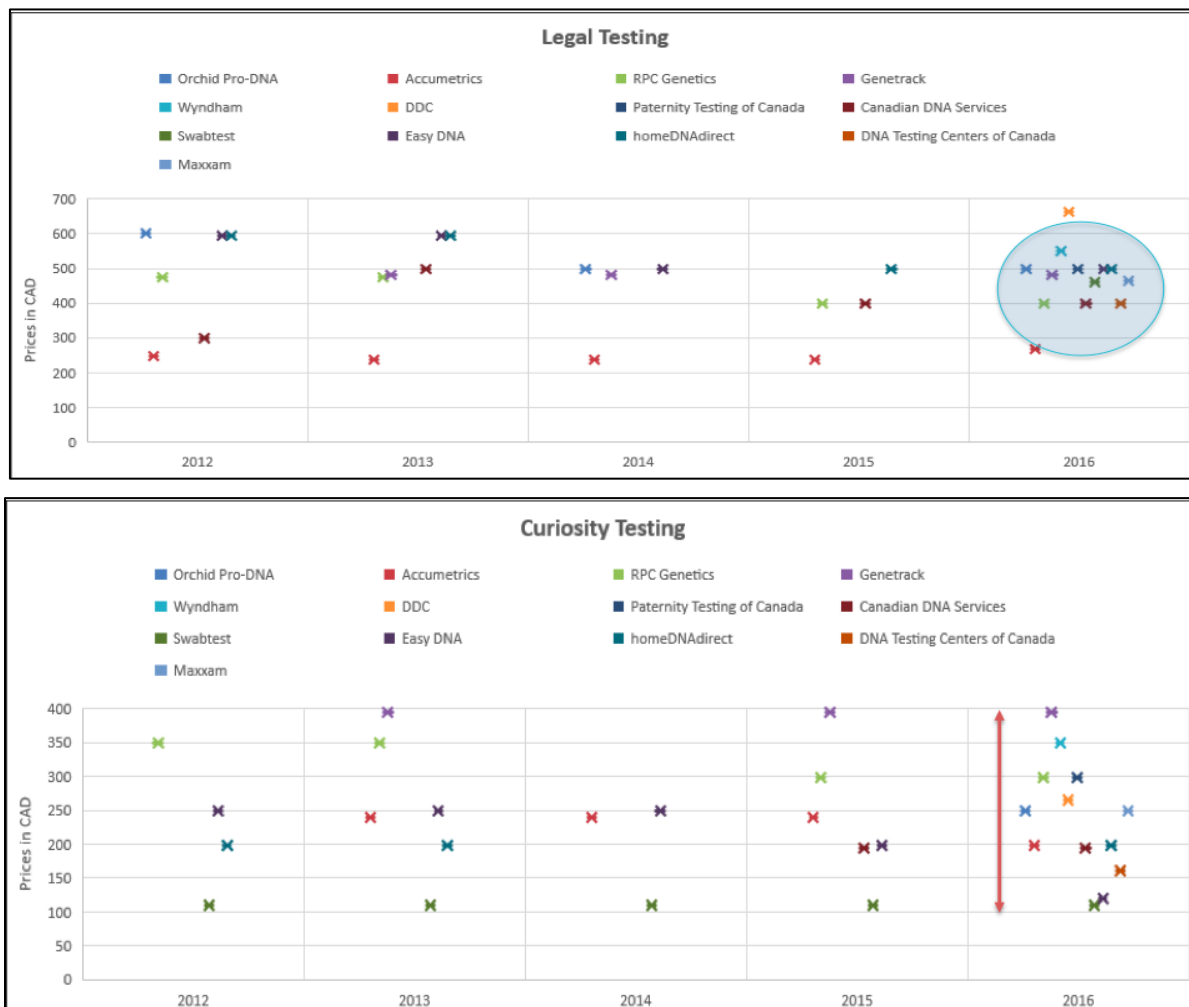
Survey results received via primary research (2): An online survey with the target group 18-30 year old young adults living in Canada. The target group was chosen based on Maxxam's estimate of their customer segment. The sample size is 74.

Appendix 8: Consumers' order of importance of four attributes related to DNA testing

Attribute	Avg. Ranking*
Accuracy of test	1.2
Price of test	2.4
Speed of test results	2.9
Customer Service	3.0

Survey results received via primary research (2):

Appendix 9: DNA Paternity Testing Industry pricing development



Source: Aggregated market pricing data received via primary research (1)